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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,506	08/09/2002	William Henry Yost	RCA 89826	9456

7590 10/13/2006
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EXAMINER

ABEDIN, SHANTO

ART UNIT	PAPER NUMBER
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2136

DATE MAILED: 10/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/089,506	YOST, WILLIAM HENRY	
	Examiner	Art Unit	
	Shanto M Z Abedin	2136	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. The examiner withdraws the finality of the previous office action, and subsequently this action is made **FINAL** (MPEP 706.07a).
2. The examiner notes that this application claims priority to a PCT application which claims priority to an earlier application filed on 09/28/1999.
3. Claim 1-7 are currently presented for the examination.
4. Claim 1-7 have been rejected.

Response to Arguments

5. Regarding 35 U.S.C 103(a) rejections of claim 1-7, the applicant primarily argues that

(a) the reference Stallings, or StJohns independently or in combination does not teach or suggest:

“...generating an associated random number and public value by both the SNMP manager and the SNMP agent;

passing the public value of the SNMP manager to the SNMP agent in a configuration file;

reading by the SNMP manager, the public value of the SNMP agent through a SNMP request using an initial valid user having access to the public value of the SNMP agent; and

computing a shared secret by the SNMP agent and the SNMP manager, using the Diffie-hellman key exchange protocol;

converting the shared secret into a readable password;

converting the readable password into a secret key; and

setting the initial authentication key, and an initial privacy key to the value of the secret key.”(remarks, page 4-7).

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(b) the rejections of claim 1-7 are improper since the invention recited in claim 1 would change the principle of operation of Stallings, which is a prohibition against a reference being used against a pending claim as provided in MPEP § 2143.01(remarks, Page 4)....However, the application of the Diffie-Helman key exchange protocol to the teachings of Stallings would completely obviate the need for the nonreversible one-way secure function, as well as the mapping of a single user key into different localized keys, thereby changing the principle of operation of the key localization method disclosed in Stallings (remarks, Page 8-9).

In response to the above argument (a), it is considered, however, the examiner respectfully disagrees with the applicant since the combination of the references Stallings, and StJohns do teach above limitations set forth by the argument (a) (please see office action below).

In response to the above argument (b), it is considered, however, the examiner respectfully disagrees with the applicant since the reference Stallings primarily concerns with the plurality of security enhancement for SNMP/ SNMPv3/USM (authentication, privacy, and access control) in accordance with the various RFC guidelines (please see title, abstract, and page 2-3, 9-14; Stallings) wherein key localization is used as only one of those enhancement. However, at the time of invention, it would be obvious to an ordinary skill of art to add further security enhancement/ improvement such as Diffie-Helman key exchange protocol for the agent and the manager for SNMP in accordance with the RFC 2274 guidelines as disclosed by the secondary reference, StJohns to provide stronger key security (please see Page 1, StJohns) without making substantial changes to Stallings' security enhancement for SNMP, or existing enhancement RFC's as referred by Stallings, and which might consequently eliminate the need for using key localization.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 1-7 are rejected under 35 USC 103 (a) as being unpatentable over Stallings (SNMPv3: A Security Enhancement for SNMP, William Stallings, IEEE, 1998) in view of StJohns (Diffie-Hellman Key Change, Internet-draft, 1998).

Regarding claim 1, Stallings teaches a method for initializing a SNMP (simple network management protocol) v3 device using an SNMP agent in the SNMPv3 device and SNMP manager remote from the SNMPv3 device, comprising:

the SNMP manager and the SNMP agent having an initial privacy key and an initial authentication key into the SNMPv3 device (Page 9, 11; privacy, authentication key; key management; management/ agent system),

converting the shared secret into a readable password (Fig 7, element: expended hashed password string; Page 12, Col 1, lines 29-48; human readable password; concatenating and repeating the users' password to itself to generate digest0; generating digest0 from the password; proposal [2]; RFC 2274);

converting the readable password into a secret key (Page 12, Col 1, lines 38-48; "secret key" shared by users and authoritative SNMP engine; converting users keys to unique keys; proposal [2]; RFC 2274); and

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setting the initial authentication key and the initial privacy key to the value of the secret key (Page 11, Col 2 to Page 12, Col 1; generating/ updating/ managing user keys; password to key generation; RFC 2274) .

As a part of the secure key management in SNMP/ SNMPv3/USM in accordance with the RFC 2274 guidelines, Stallings teaches the system wherein key management is supported by locally storing the privacy/ encryption, and authentication keys, and make them inaccessible by the SNMP (key localization, key management; Page 11-12). In same context, Stallings further teaches rules/ policies for key updating/ password to key generation in accordance with the proposed USM and RFC guidelines (Page 11-12). However, Stallings fails to disclose utilizing Diffie-Hellman key exchange protocol as a part of the key management or key updating. In particularly, Stallings fails to disclose:

Utilizing a Diffie-Hellman exchange protocol by the SNMP manager and the SNMP agent to enter an initial privacy key and an initial authentication key into the SNMPv3 device,

Wherein said utilizing step includes:

generating an associated random number and public value by both the SNMP manager and the SNMP agent;

passing the public value of the SNMP manager to the SNMP agent in a configuration file;

reading by the SNMP manager, the public value of the SNMP agent through a SNMP request using an initial valid user having access to the public value of the SNMP agent; and

computing a shared secret by the SNMP agent and the SNMP manager, using the Diffie-Hellman key exchange protocol;

However, StJohns teaches

Utilizing a Deffie-Hellman exchange protocol by the SNMP manager and the SNMP agent to enter an initial privacy key and an initial authentication key into the SNMPv3 device (Page 1, last paragraph; Page 5, lines 1-3; Deffie-Hellman; authentication and privacy keys),

Wherein said utilizing step includes:

generating an associated random number and public value by both the SNMP manager and the SNMP agent (Page 6-7; Deffie-Hellman; public values; random integers; usmDHKeyObjects)
passing the public value of the SNMP manager to the SNMP agent in a configuration file (Page 4, Sec 1.1; usmDHPublicObjects containing DH public parameters)
reading by the SNMP manager, the public value of the SNMP agent through a SNMP request using an initial valid user having access to the public value of the SNMP agent (Page 6-7; Deffie-Hellman; exchanging public values;); and
computing a shared secret by the SNMP agent and the SNMP manager, using the Deffie-Hellman key exchange protocol (Page 7; Deffie-Hellman; computing shared secret);

StJohns further teaches setting the initial authentication key and the initial privacy key to the value of the secret key (Page 4, sec 1.1; Page 5, line 1-3; Deffie-Hellman; secret key; updating authentication and privacy keys).

StJohns and Stallings are analogous art because they are from the same field of endeavor of SNMP security and key management. At the time of the invention, it would have been obvious to a person of ordinary skill in art to combine the teachings of StJohns with Stallings to utilize a Diffie Hellman key exchange protocol for managing/ updating keys in order to provide stronger key security (please see Page 1, StJohns), and which might consequently eliminate the need for using key localization.

Regarding claim 2, it is rejected applying as above rejecting claim 1, furthermore, Stallings teaches the method wherein the readable password comprises a 16 character password (Page 12, Col 1, lines 28-37; human-readable passwords; RFC-2274 algorithm for mapping password to key; octet privacy and authentication key; password to key; Page 12, Col 2, lines 25-40; single/ plurality of password to create keys of plurality of bit length).

Regarding claim 3, it is rejected applying as above rejecting claim 1, furthermore, Stallings teaches the method wherein the secret key comprises a 16 byte string (Page 12, Col 1, lines 29-49; Page 13, Col 1, lines 1-10; 16 octet key).

Regarding claim 4, it is rejected applying as above rejecting claim 1, furthermore, Stallings teaches the method further characterized in the configuration file comprises a proprietary configuration file element for passing the public value of the SNMP manager to the SNMP agent (Page 3, Col 2, lines 26- 34; set of documents defining network protocol; proprietary network management applications; Page 4, Col 2, lines 25-50; Page 9, Col 2, lines 58-66; command generator; USM files in the security related parameters; authoritative module).

Regarding claim 5, it is rejected applying as above rejecting claim 4, furthermore, Stallings teaches the method wherein the SNMPv3 device operates in a SNMPv1/ v2c enabled network comprising a SNMPv2c device (Page 2, Col 2, lines 1-37; SNMPv3 defines a security capability to be used in conjunction with SNMPv2 or SNMPv1), and wherein the proprietary configuration file element is ignored by the SNMPv2c device (Fig 1, element : PDU processing for SNMPv1 or SNMPv2,

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element: SNMPv3 USM; Table 2, element: snmpSecurityModel; Page 2, Col 2, lines 5-35; User Security Model (USM) for SNMPv3; SNMP Protocol Data Unit (PDU) for SNMPv1 and SNMPv2; Page 3, Col 2, lines 25-45; Management Information Base (MIB) for keeping local configuration data for SNMPv2; *independent configuration/ security or management protocol for the different version of SNMP*).

Regarding claim 6, it is rejected applying as above rejecting claim 1, furthermore, StJohns discloses the method wherein the public value of the SNMP manager is included in a management information base (MIB) object in the configuration file (Page 7; usmDHPublicobjects).

Regarding claim 7, it is rejected applying as above rejecting claim 1, furthermore, StJohns discloses the method wherein the public value of the SNMP manager is initially stored in a third entity different from that associated with the SNMP manager and the SNMP agent (Page 1, MIB, Agent , manager), and the method comprises downloading the configuration from the third entity by the SNMP agent (Page 9-10; usmUserPrivProtocol; usmDHKeyMIBCompliance; read; installed).

Conclusion

7. **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for response to this action is set to expire in 3 (Three) months and 0 (Zero) days from the mailing date of this letter. Failure to respond within the period for response will result in ABANDONMENT of the application (see 35 U.S.C 133, M.P.E.P 710.02(b)).

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shanto M Z Abedin whose telephone number is 571-272-3551. The examiner can normally be reached on M-F from 9:00 AM to 5:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Moazzami Nasser, can be reached on 571-272-4195. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shanto M Z Abedin

Examiner, A.U. 2136

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10/04/06